# TEXTILE READER'S GUIDE

## *Classification of Contents*


| | |
|---|---|
| Fibers | 1043 |
| Yarn Production | 1046 |
| Fabric Production | 1050 |
| Standard Finishing | 1057 |
| Dyeing and Printing | 1057 |
| Special Finishing | 1059 |
| Testing and Measurement | 1062 |
| Textile Mills | 1063 |
| Chemistry and Physics | 1065 |
| Index to Authors | Inside back cover |



TEXTILE TECHNOLOGY DIGEST is published monthly by the Institute of Textile Technology, Charlottesville, Virginia. In preparing these abstracts, the editorial staff seeks to report correctly the contents of the original papers without reflecting the views of the staff or the members of the Institute. Printed in the U. S. A.


Copyright 1952 by the Institute of Textile Technology.


*(An explanation of the classification used in the DIGEST was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors.)*


***Subscriptions are available to Non-members of the Institute. The rate is $25.00 per year.***

***Advertising rates are available upon request.***


# Abstracts

[ 1043 ]

## FIBERS A

### Natural Fibers A 1

**Check sample testing of physical properties of cotton with instruments**

Turner H. Hopper. *Textile Research Journal 22,* 472 (July, 1952).

The series of interlaboratory check tests of the physical properties of cotton fibers summarizer below represents the first large-scale effort to determine the extent to which different laboratories agree or disagree in their measurements of the fiber properties of length, strength, and fineness. In setting up these tests, the laboratories were instructed to use their regular test procedures and no effort was made to achieve uniformity of procedure. No one should, therefore, attempt to read into the report reproductibility of results in terms of equipment or methods. It is expected that the inter-laboratory check sample tests will be continued, and that they will ultimately lead to precisely defined methods that should result in a much better agreement between laboratories. The Task Group on Inter-Laboratory Check Sample Testing of Cotton Fibers has approved the publication of a summary of the results of this first series of tests for the information of all laboratories interested in cotton fiber measurements.

**Dynamic friction of viscose fibers**

C. Wood. *J. Textile Inst. 43,* T338-49 (1952).

An apparatus is described for the measurement of the frictional force required to withdraw a single fiber at various speeds from a bundle of fibers held under different states of compression by a load applied to the lid of a rectangular channel. The relationship between frictional force and applied load and the relation between frictional force and relative velocity are determined.

**Properties of apparel wools; modification of fiber surface during worsted processing**

D. F. O'Rielly, J. C. Whitwell, R. O. Steele, and J. H. Wakelin. *Textile Research Journal 22,* 441 (July, 1952).

Modification of the fiber surface during processing has been studied on three wools of Aus-

# TEXTILE READER'S GUIDE

## *Classification of Contents*


| | |
|---|---|
| Fibers | 1043 |
| Yarn Production | 1046 |
| Fabric Production | 1050 |
| Standard Finishing | 1057 |
| Dyeing and Printing | 1057 |
| Special Finishing | 1059 |
| Testing and Measurement | 1062 |
| Textile Mills | 1063 |
| Chemistry and Physics | 1065 |
| Index to Authors | Inside back cover |



TEXTILE TECHNOLOGY DIGEST is published monthly by the Institute of Textile Technology, Charlottesville, Virginia. In preparing these abstracts, the editorial staff seeks to report correctly the contents of the original papers without reflecting the views of the staff or the members of the Institute. Printed in the U. S. A.


Copyright 1952 by the Institute of Textile Technology.


*(An explanation of the classification used in the DIGEST was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors.)*


***Subscriptions are available to Non-members of the Institute. The rate is $25.00 per year.***

***Advertising rates are available upon request.***


# Abstracts

[ 1043 ]

## FIBERS A

### Natural Fibers A 1

**Check sample testing of physical properties of cotton with instruments**

Turner H. Hopper. *Textile Research Journal 22,* 472 (July, 1952).

The series of interlaboratory check tests of the physical properties of cotton fibers summarizer below represents the first large-scale effort to determine the extent to which different laboratories agree or disagree in their measurements of the fiber properties of length, strength, and fineness. In setting up these tests, the laboratories were instructed to use their regular test procedures and no effort was made to achieve uniformity of procedure. No one should, therefore, attempt to read into the report reproductibility of results in terms of equipment or methods. It is expected that the inter-laboratory check sample tests will be continued, and that they will ultimately lead to precisely defined methods that should result in a much better agreement between laboratories. The Task Group on Inter-Laboratory Check Sample Testing of Cotton Fibers has approved the publication of a summary of the results of this first series of tests for the information of all laboratories interested in cotton fiber measurements.

**Dynamic friction of viscose fibers**

C. Wood. *J. Textile Inst. 43,* T338-49 (1952).

An apparatus is described for the measurement of the frictional force required to withdraw a single fiber at various speeds from a bundle of fibers held under different states of compression by a load applied to the lid of a rectangular channel. The relationship between frictional force and applied load and the relation between frictional force and relative velocity are determined.

**Properties of apparel wools; modification of fiber surface during worsted processing**

D. F. O'Rielly, J. C. Whitwell, R. O. Steele, and J. H. Wakelin. *Textile Research Journal 22,* 441 (July, 1952).

Modification of the fiber surface during processing has been studied on three wools of Aus-

tralian fine, domestic fine, and domestic medium grades. Samples were taken from each wool at each stage of their manufacture into a worsted fabric by the Forstmann Woolen Company. Groups of fibers, selected randomly from each sample, were treated with Pauly reagent and examined microscopically. The amount of color on the fiber was estimated visually, and the amout of scale disturbance was assessed. The rate of exhaustion of Anthraquinone Blue SKY was also measured on samples from each processing stage.

A consistently increasing amount of surface modification was observed with all three wools as the manufacturing process advanced. The susceptibility of the wools to staining with Pauly reagent and their rate of taking up Blue SKY from a dye bath also increased. However, all of these changes were reversed by a steaming process such as is frequently used in normal worsted processing. It was concluded that the dye susceptibility of processed wool is related to the amount of scale disturbance of the fibers and that the epicuticle does not seem to constitute the only major resistance to dye penetration.

**The supercontraction of keratin**

E. H. Mercer. *Textile Research Journal 22,* 479 (July, 1952).

The examination of fragments of supercontracted wool in the electron microscope enables further insight into the nature of one kind of supercontraction. The microfibrils in the supercontracted form appear to be twisted, and it is suggested that such twisting rather than molecular folding is directly related to the length changes of the whole fiber.

The twisting of microfibrils could be due to a bending of the component microfibrils into arcs or helixes. This change could have a molecular basis.

Little similarity between contracted muscle and supercontracted keratin can be found by using the electron microscope.

**The swelling of human hair in water and water vapor**

Paul B. Stam, Robert F. Kratz, and Howard J. White, Jr. *Textile Research Journal 22,* 448, (July, 1952).

Data are presented on the swelling of free and strained hair fibers in water and water vapor. The strained hair fibers were either under constant load or at constant elongation. In some cases rates of swelling are also shown. The





swelling isotherms of the free fibers follow the volume changes predicted from density measurements (for wool) except at very high relative humidities. Straining the fiber may either increase or decrease the amount of swelling, depending on the type of experiment. An attempt to develop a statistical mechanical model to explain the equilibrum absorption and swelling behavior of a hair fiber is only partly successful. Finally, there seems to be evidence from the rates of welling to incidate inhomogeneities in the hair with respect to its response to mechanical deformations.

**Treatment of wool**

Percy Walmsley Cunliffe, John Leslie Sharp, and Frank Ashworth, (to The British Cotton & Wool Dyers' Association) U. S. P. 2,599,977 June 19, 1952).

A method of treating materials composed at least in part of animal fibers which are capable of being felted, such as wool, in order to reduce the tendency of such materials to felt and shrink when washed in aqueous liquors, comprising treating the material at a temperature of at least 50° c. with a solution of a compound of a metal selected from the group consisting of copper, nickel, silver and mercury, of such strength that the amount of metal present, expressed as a percentage of the weight of the wool, is 0.001%-0.15% in the case of copper, 0.001%-0.75% in the case of nickel, 0.03%-0.75% in the case of mercury, until the metal compound in the solution is substantially exhausted, and subsequently treating the material with a solution of a peroxybody at a pH of not less than 3 and not appreciably greater than 10.5 at a temperature of 30-80° C.

## Artificial fibers A 2

**Cotton systems adjustments made in processing acrilan**

Anon. *Daily News Record,* page 30, (September 11, 1952).

See front section.

**Rayon staple yarns spun on different systems**

G. V. Lund. *J. of Textile Inst. 43,* T299-324 (July 1952).

Measured variables and fabric appearance have been compared for yarns spun from viscose rayon staple on the following systems of processing: flax, worsted, Schappe, cotton preparation systems, and woolen and cotton condenser sys-

tems. The size and type of variations to be expected are illustrated. Coefficient of variation length curves and fabric transmission prints are presented.

**Synthetic fiber**

John V. Flannagan (E. I. duPont de Nemours and Co.). U. S. P. 2,607,751 (August 19, 1952).

A new composition of matter for spinning yarn comprises a polymer of acrylonitrile in admixture with a non-halogenated organic anhydride such as maleic anhydride.

**Snythetic fibers**

*Ind. and Eng. Chem. 44*, 2101-86 (1952).

The symposium on synthetic fibers which was presented at the 121st meeting of the ACS is given in full. The papers cover fiber properties, production factors, uses for the new fibers and the impact of the new fibers on established fibers.

## YARN PRODUCTION B

### Fiber Preparation B 1

**Application of ultrasonic energy in wool scouring**

E. I. Garlinskaya, N. N. Dolgopolov, A. I. Matetsky and E. L. Ruban. *Tekstil Prom. 12*, 10 (April, 1952); *J. Soc. of Dyers and Cols. 68*, 325 August, 1952).

Laboratory experiments show that the scouring of wool in presence of ultrasonic waves is very effective. Neutral or only weakly alkaline solutions may be used, and the product is whiter, softer, and freer from fiber damage than wool scoured in the usual way in an alkaline solution. Ultrasonic waves are particularly effective for the disinfection of wool; they render both the wool and the effluent completely sterile, while having no deleterious effect on the fiber.

**Now you can grade cotton with a laboratory instrument**

Thomas V. Crawley, Jr., Jack D. Towery, Billy K. Power, and Lyle E. Hessler. *Textile World*, page 100-101 (September, 1952).

See front section of September 1952 issue.

**Off-shade and cloudy fabrics**

W. J. Crofts. *Textile Industries 116* page 162 (September, 1952).

Off-shades, shaded, and cloudy fabrics are a source of expense and a cause of lost time in many carded woolen mills. Blends that show





off-shade in the roving must be taken back to the blending room for remixing with small amounts of one or more colors to alter the mix to the correct shade. The customer demands and expects the shade to be right, and buyers, especially of the higher grades, do not want off-shades or cloudy fabrics, even at a reduced price.

### Carding and Combing B 2

**Another step toward better carding**

Anon. *Saco-Lowell Bulletin*, page 36, 37 (June, 1952).

See front section.

**Blends of acetate staple and other fibers**

A. McGill and H. Wild. *Textile Manufacturer*, page 395 (August, 1952).

See front section.

**Controlling wool card roving weights**

Anon. *Textile Age*, page 18 (September, 1952).

See front section of September 1952 issue.

**Effect of fiber fineness on nepping of card web**

Chas. T. Marth, Harry E. Arthur and Earl E. Berkley. *Textile Res. J. 22*, 561-66 (1952).

A study was made of the effect of fiber fineness on the tendency of cottons to nep in ordinary processing into carded yarns. The micronaire fineness, converted curvilinear scale, ranged from 2.3 to 6.2. The number of neps per 100 sq. in of card web varied from 4-308. When the fineness was plotted against the neps in the card web, it was found that the number of neps increase as the micronaire readings decrease. Tabular data is presented.

**Slow card grinding reduces neps**

Anon. *Textile Industries116*, p 175 (September, 1952).

A number of card room overseers have been experimenting recently with "slow grinding," in which lower speeds are employed for the doffer during the grinding process. The converts are convinced that it does a far better job and keeps the card in better condition.

The belting of the card for grinding differs from the conventional method, but is no more difficult or time consuming, so there is no reason for not giving the slow grinding method a trial to see if it offers the advantages claimed by its proponents.

## Drafting and Roving B 3

**Flier**

Frederick W. Wild, U. S. P. 2,599,356 (June 3, 1952).

In a flier, a head having a tubular bearing stem, a hollow thread guide having an upper transverse portion secured to the head at one end thereof and a depending portion, the guide having a longitudinal thread slot, and a solid balance rod having an upper transverse portion secured to the head at the other end thereof and a depending portion, the transverse portion of the guide being vertically displaced with respect to the transverse portion of the balance rod.

**Pneumastop—Milepost for roving frames?**

P. M. Thomas. *Textile World*, page 106-107 (September, 1952).

See front section of September 1952 issue.

## Spinning B 4

**Covering for textile machinery rollers**

Abraham L. Freedlander (to the Dayton Rubber Company). U. S. P. 2,597,858 (May 27, 1952).

A rubber cover for textile rollers having an outer rubber tension alyer, an intermediate rubber neutral axis layer, and an inner rubber compression layer, and having at least one layer of cables embedded in the neutral layer, of which is provided with a coating of cushioning and bonding material.

**New English instrument measures yarn variations**

Anon. *Daily News Record*, page 44 (September 8, 1952).

See front section.

**Roth single-belt unit can now be converted to double-belt drafting system**

Anon. *Textile Industries*, page 236, 239 (September, 1952).

See front section.

**Spinning frame makes yarn from sliver**

Anon. *Textile Industries*, pages 221, 224-225 (September, 1952).

See front Section.

**Spinning machine**

Daniel W. Maxham. U. S. P. 2,598,185 (May 27, 1952).

In a spinning machine, an elongated twist





needle; means to rotate the twist needle on its longitudinal axis; means to deliver fibrous material to the twist needle; and means to assist the twist needle to twist the material and initially draw the twisted fibers off the needle, including a rotatable member having an outer periphery closely adjacent the periphery of the twist needle at all times, the axis of rotation of the twist needle being non-parallel with respect to the axis of rotation of the rotatable member.

**The new era filling spindle**

Anon. *Saco-Lowell Bulletin*, page 8,9 (June, 1952).

See front section.

**Yarn twisting machine**

Jack K. Hartley, Vernon F. West and Thomas E. Edwards (to Courtaulds Limited). U. S. P. 2,599,256 (June 3, 1952).

A yarn twisting machine comprising a double twist spindle pivoted at its lower end and so mounted that when free it falls forward to a non-operative position, a collector for the twisted yarn, a yarn break detector and catch mechanism for holding the double twist spindle in a vertical driving position and releasing it at the instigation of the yarn break detector.

## Winding and Spooling B 5

**Fluid control mechanism for driving winding machines**

A driving mechanism for a take-up roll comprising a driving shaft, a driven shaft operating the take-up roll, differential gearing connecting the shafts including a unit relatively rotatable with reference to both of the shafts, a pressure fluid system including a pump driven from the unit, means for throttling the flow through the system to load the pump and retard the unit, a brake to retard the unit and means responsive to the pressure on the fluid system for releasing the brake.

## Yarn Processing B 6

**Apparatus for liquid treatment of yarns**

Horace P. Fry, Jr. (American Viscose Corp.). U. S. P. 2,608,850 (September 2, 1952).

Apparatus for liquid treatment of yarns comprises two rotating thread advancing rotors mounted one above the other, means for applying liquids to the yarn convolutions on the upper rotor, and liquid stripping means with conduit

means connected thereto for directing the liquid to the lower rotor.

**"Stretch" nylon to be seen in woven goods**

Anon. *Daily News Record*, page 27 (September 15, 1952).

See front section.

## Yarn applications B 9

**Cellulose ether**

Andrew Tainter Walter and Bernard A. Price. (Carbide and Carbon Corp.) U. S. P. 2,609,569 (September 9, 1952).

A stretched water-soluble multiple filament textile yarn formed of hydroxyethyl cellulose.

# FABRIC PRODUCTION C

## Yarn Preparation C 1

**Conditioning yarn thread and the like**

Charles F. Dulken, Helmuth C. Sonntag, and George Westwater, (to Dulken). U. S. P. 2,598,239 (May 27, 1952).

An apparatus for producing a film of yarn conditioning liquid on the roller driving the package in a yarn winding machine, the apparatus comprising, in combination, a flat substantially triangular case having a substantially triangular bottom wall and a substantially triangular top wall parallel to the bottom wall, an atomizing nozzle terminating in a corner of the case and delivering a spray jet of liquid into the case, the case having a side wall disposed opposite the nozzle and extending at substantially a right angle to the bottom and top walls and comprising slot means for discharging a sheet of vaporized liquid from the case.

**Desizing agents and desizing baths**

Eduard Schubert, (to Schweizerische Ferment A. G.,). U. S. P. 2,599,867 (June 10, 1952).

A desizing agent comprising an effective desizing amount of amylase, about 50% of common salt and about 20-25% of calcium sulphate.

**Evaluation of textile sizes**

D. E. King, H. A. Weil, F. E. Condo and H. A. Rutherford. *Textile Res. J. 22,* 567-73 (1952).

The effect of sizing mixtures on the slubby portions of a staple yarn was determined indirectly by the application of the size to a cotton roving and subsequent testing of the roving for strength,





ultimate elongation, and stiffness. In contrast to the methods which employ yarn as the base material for the application of the size, large differences between sizing mixtures were found by this procedure. The evaluation method which was investigated proved useful for the screening of sizes for knitting yarns in which the failure to give good knitting quality was caused by the presence of slubs.

**Mill eliminates size cooking and storage kettles**

Staff. *Textile Industries 116,* pages 158-159 (September, 1952).

See front section of September 1952 issue.

**Sizing for cellulosic textiles**

Carl Spatt (General Aniline and Film Corp.). U. S. P. 2,609,350 (September 2, 1952).

A method for sizing cellulosic textiles comprises treating them with a solution of polyvinyl alcohol and a synthetic resin obtained by polymerizing maleic anhydride with a polymerizable compound containing a single $C=CH_2$ group and a basic substance and thereafter heating the fabric.

**Some of the factors influencing yarn tension in warping**

R. F. Dyer, W. G. Faw, and R. L. Beard. *Textile Research Journal 22,* 487 (July, 1952).

The successful warping of coned yarn depends to a major degree on applying equal and constant tension on each end of yarn so that smooth homogeneous beams are produced. This paper reports a study made to determine the factors which influence warping tensions. Several variable inherent in the yarn or in a coned yarn package which affect withdrawal tensions have been found. The variables of yarn twist, ballooning of the yarn during withdrawal, yarn speed, and cone size are discussed as factors which control withdrawal tension in warping. The magnitude and frequency of tension variations caused by these factors are shown by graphic records obtained by suitable recording instruments. The three basic methods for applying tension to the yarn have been classified as multiplying, additive, and compensating. The limitations and advantages of tension devices incorporating these basic methods in pure and combined forms are discussed with reference to the basic equations and graphic records.

**Yarn sizing composition**

Edward P. Czerwin and Lynden D. Martin E. I. duPont de Nemours and Co.). U. S. P.

2,607,765 (August 19, 1952).

A process for producing a yarn sizing composition comprises dispersing a finely divided polyvinyl alcohol and boric acid in an organic liquid and then adding a boric acid solvent to the dispersion to cause the formation of a particulate reaction product.

## Weaving C 2

**A new Saurer automatic loom**

Anon. *Textile Weekly 50,* p 438 (August 15, 1952).

The Saurer automatic 100W type looms are built without an overhead structure. They are best suited to the manufacture of light to medium weight fabrics (up to a maximum of approximately 15 oz. per square yard), and are built on the principle of a so-called "basic loom." The various necessary motions are then built on to this basic loom to give single or multi-shuttle automatics, filling mixers, or looms with drop boxes each side, or even fully automatic terry towelling looms, etc. The advantage claimed for this "box and bricks" principle lie not only in the simplification and cheapening of loom construction and erection; the user to accommodate his weaving machines to changing market conditions by the corresponding alterations to his looms—by adding or removing various parts, and rebuilding his loom at will to suit his trade. This new loom has four drop boxes and is fitted with positive Saurer dobby. A rayon umbrella cloth with four colors of filling was woven on this loom when exhibited at the Fairs of Basle, Milan, Hanover and Toronto.

**Bobbins conveyor control pays off**

Staff. *Textile Industries 116,* page 161 (September, 1952).

See front section of September 1952 issue.

**Filling control in weaving synthetic yarns**

Richard B. Pressley. *Textile World 102,* page 76 September, 1952).

See front section of September 1952 issue.

**German knot-tier with 4 units said to be versatile**

*Daily News Record,* page 44 (September 8, 1952).

See front section.

**How one mill controls filling at the loom**

Anon. *Textile World 102,* pages 77-78 (September, 1952).

See front section of September 1952 issue.



**Pick wheel operated loom stop motion mechanism**

Ludlum H. Rockwell, U. S. P. 2,599,584, June 10, 1952.

In combination with a loom having a frame, a pick wheel journaled on the frame and provided with peripheral ratchet teeth, means engageable with the pick wheel teeth for imparting step by step rotational movement to the pick wheel, means engageable with the pick wheel teeth as each step is completed to hold the pick wheel against return movement, pick wheel operated switch mechanism for stopping the loom motion upon failure of the pick wheel to complete a full rotational step comprising a bar pivotally mounted on the loom frame and disposed adjacent the periphery of the pick wheel, a detent on the bar engaging the ratchet teeth and dropping into the spaces between adjacent teeth as the pick wheel rotates, a fixed contact carried by the bar adjacent the detent, a switch arm pivotally mounted on the bar and carrying a movable contact complementary to the fixed contact, and a spring connected between the bar and the switch arm resiliently urging the movable contact away from the fixed contact, the arm including a portion extending along the detent and projecting from one side of the latter for engagement by the ratchet teeth to move the movable contact into engagement with the fixed contact upon reverse rotational movement of the pick wheel.

**Separable fastener**

George Waldes (Waldes Kohinoor, Inc.). U. S. P. 2,607,715 (August 19, 1952).

A method of attaching a fabric fastener tape to an article of thermoplastic material comprises provided a tape woven from yarns of natural fibers, the article engaging zone being more porous than its fastener carrying zone, pressing together the more porous zone and the article edge while heating the material.

**Servicing machine for looms**

Joseph Kelly McCutchen and David A. Tillman. U. S. P. 2,598,578 (May 27, 1952).

In a machine for severing floating yarn portions upon a fabric, a track, a carriage mounted upon the track means to sever the floating portions including a power operated cutter mounted upon the carriage, means to move the carriage in opposite directions and connected therewith

and including a gear, a pair of driving gears arranged near the first named gear, and cam operated means to shift the pair of driving gears so that they both disengage the first named gear and then alternately move one driving gear into engagement with the first named gear while the other driving gear disengages the same.

**Shuttle cleaner**

Robert Whewell, Jr. (to The Warner & Swassey Company). U. S. P. 2,599,731, June 10, 1952.

In a weaving machine of the gripper-shuttle type employing a shuttle having openable thread receiving jaws, a shuttle carrier for removably supporting such a shuttle, mechanism moving the carrier and shuttle to a pick position, and cleaning means mounted within the path of the carrier and shuttle for cleaning the shuttle jaws preparatory to being brought into the pick position.

## Knitting C 3

**Pre-boarding machine with twin chambers**

Grimsley & Co., Ltd., S. Grimsley and G. F. Grimsley. Brit. P. 664, 123 *Dyer 107*, 262-3 (February 22, 1952).

A hosiery finishing machine which is operated at will by an attendant has two heating chambers seperated by a vertical partition with the housing at its lower front part extending forwards. This front chamber portion is also divided in two by an extension of the partition. A set of flat-section slides, fixed in each chamber, is reciprocable along parallel guide lines,( and a rod with a handle is attached to the front of each side. A form carrier, pivoted to each slide, has at its upper edge a slot to receive the stub end of a hose form. A pair of parallel bars extend across the lower width of each housing chamber and are arranged in the paths of movement of the form carriers. When a slide is pulled forwards towards the front of the housing, the carrier meets one of the bars and is caused to pivot. When the slide is pushed back, the carrier contacts the other bar, and reverse pivoting takes place so that the form is up-right in the chamber. A handle is provided for pulling a sliding door from one end to the other of the housing, according to which chamber is to be closed. Means are provided for drawing air heated by a steam tube downwards through each chamber by the forced draught set up by fans.





**Fabric from a composite yarn**

Bertram P. Ridge (Imperial Chem. Industries Ltd.). U. S. P. 2,607,656 (August 19, 1952).

Process for producing fabrics comprises forming a composite yarn from twistless rayon yarn and a yarn of a highly polymerized polyethylene terephthalate, producing a fabric from the composite yarn and then dissolving out the terephthalate yarn.

**Some properties of thermoplastic fiber-bonded fabrics**

Arthur C. Wrotnowski. *Textile Research Journal 22*, 480, (July, 1952).

Test procedures and physical properties are given for cotton, nylon garnett, asbestos, and glass fiber thermoplastic fiber-bonded fabrics. A range of thicknesses for each blend and weight is used to demonstrate a wide variety of fibrous constructions. The tensile strength, air permeability, and water absorption characteristics of four fiber-bonded fabrics are discussed It is indicated that any textile fiber can be fabricated by this process.

**Striped creped fabrics**

Ernst Weiss and Karl Risch Heberlein Patent Corp.). U. S. P. 2,607,655 (August 19, 1952).

A process for producing striped, creped fabrics comprises printing a fabric which contains sufficient cellulose to produce a crepe effect when treated with a caustic shrinkage agent with parallel spaced stripes of which some are colored, wherein some of the stripes are resistant to shrinkage.

**Triple-ply corrugated fabric**

Boutwell H. Foster (U. S. Rubber Co.).

A triple-ply corrugated fabric comprises a top and bottom fabric containing heat-shrinkable filaments, and an intermediate fabric of non-shrinkable yarns, wherein the top and bottom fabrics are contracted by the shrunken filaments so that the intermediate fabric is corrugated by the contracted top and bottom fabrics.

**Unwoven fabric**

Piero Modigliani (Johns-Mansville Corp.). U. S. P. 2,609,320 (September 2, 1952).

A method for producing an unwoven fabric comprises forming a mat of layers of filaments, the filaments extending transversely of the mat and with the filaments of adjacent layers crossing

at acute angles, applying a binder thereto, expanding the mat and then setting the binder.

**Unwoven fabric**

Jos. Goldman (Barnhardt Mfg. Co.). U. S. P. 2,608,901 (September 2, 1952).

A method for producing a cylindrical fibrous body comprises arranging long unspun fibers longitudinally, moving the body longitudinally while wrapping therearound a composite strand of latent activatable adhesive strands, and unstrands to bond the unactivable strands to the fibers.

## Fabric applications C 6

**Cord material for reinforced rubber products**

Industrial Rayon Corp. *J. Soc. of Dyers and Cols. 68,* B. P. 673,814, p 328 (August, 1952).

Cord material for tires or other reinforced rubber products, having a denier not >500, is produced by treating filamentary material with a composition comprising a partial ester of a fatty acid containing not <12 C with a hexahydric alcohol or ots anhydro derivative, e. g. sorbitan mono-palmitate, and giving the treated filaments at least 1.5 t. p. m.

**Reinforced paper**

Arthur E. Carlson, U. S. P. 2,610,936 (September 9, 1952).

A reinforced paper is obtained by adhesively joining to one face of a single ply of paper a multiplicity of continuous synthetic filaments or mono-fils in untwisted relationship. The filaments may be colored if desired.

**Rubberized piles for tires**

Dan River Mills. *J. Soc. of Dyers and Cols. 68,* 328 (August, 1952) B. P. 671,394.

Individual cords are pretensioned to remove stretch variations, impregnated or coated with a rubber-compatible bonding material, stressed by longitudinal tension and/or lateral compression further to remove residual stretch variation, and dried while in this state to set the bonding material. Rubber is then calendered directly on to both sides of a sheet made from a number of such cords.

**Surface coating and impregnation of fabric**

C. A. Litzler. *Rubber Age 71,* 501-6, 631-8, 781-6 (1952).

An article is presented which includes 53 separate illustrations and outlines broadly the





general design considerations and application techniques of many types of coating and saturating systems for fabric impregnation. Emphasis is placed on the processes used for rubber and rubberlike materials. Some data on systems normally used for organosols and plastisols is also included.

## STANDARD FINISHING D

**How to get square cloth in wet processing**

Anon. *Textile Industries,* pages 150-51-52-53 (September, 1952).

See front section.

## DYEING AND PRINTING E

**Applies spectrophotometry. (1) Color matching with the aid of the "R" cam**

Roland E. Derby, Jr., *American Dyestuff Reporter 41,* 556 (September 1, 1952).

It has not been possible in this brief paper to cover all the problems in the coloring of textiles whose solutions are amenable to use of the R cam and some ingenuity. The method appears to be satisfactory in limited experiments with nylon, Orlon acrylic fiber and Dacron ployester fiber. However, the dyeing of these fibers at present is quite difficult and noted for its lack of consistency, so that predicting results is quite uncertain. An R-cam plot is still the most useful, though, even in these cases as it permits easy dye identification.

The method outlined is merely one which has been very successful in the author's laboratory. It may not be useful to you. Your particular problem may require modification of both the method and the equations. This method has been used in countless ways. More curves are drawn with the R cam than with any other. It is the author's opinion that "matches" should be made as close to the curve shape of the standard as possible even at the expense in some cases of using four dyes instead of three. It is a considerable aid to understanding the color phenomena involved in color-mixing. A dyer or color matcher, well versed in his field and with a thorough knowledge of the principles of spectrophotometry and the use of the R cam could increase his efficiency considerably. Unfortunately, such a combination has in the past been exceedingly rare.

**ACS told of dyes to make textiles water repellent**

*Daily News Record* (September 16, 1952).

See front section.

**Batch dyeing**

Paul M. Cole. *Modern Textile Magazine 33,* 76-77, 107-8 (1952).

A new machine for batch dyeing, named Barator, has been developed. The exterior is nothing more than a simple horizontal autoclave. There is a single driven shaft passing through the center of the head. This shaft turns at a low speed and is sealed like any agitator shaft. A large carriage mounted on tracks in front of the autoclave removes the head and exterior fabric holder for unloading and loading. The fabric is loaded on the rotor and when the vessel is closed, the dye liquor is added to the desired depth. The rotor is turned by the shaft. All portions of this fabric have equal contact with the liquor regardless of how shallow the bath may be and all portions pass through the bath several times a minute.

**Dyeing of organic derivative of cellulose textile material involving the steps of impregnating it with a fre leuco vat-dyestuff, oxidation, and alkaline reduction of the oxidized dyestuff**

William T. Haggerty, Jr., and George C. Ward (to Celanese Corporation). U. S. P. 2,598,786 (June 3, 1952).

Process for the coloration of textile materials which comprises mechanically impregnating an organic derivative of cellulose textile material with an aqueous dispersion of a free leuco vat dyestuff, drying the impregnated textile material in air whereby the dyestuff is oxidized, impregnating the dried textile material with an aqueous solution containing 1.5 to 12% by weight of sodium sulfoxylate formaldehyde and 1.5 to 12% by weight of sodium carbonate, steaming the wet textile material again to reduce and fix the free leuco vat dyestuff on the textile material, and then oxidizing the vat dyestuff to the final colored form in an aqueous oxidizing bath.

**Silicon-containing azo dyes.—Part III**

S. V. Sunthankar and Henry Gilman. *Textile Res. J. 22,* 574-83 (1952).

In an examination of the dyeing properties and light-fastness of some azo dyes, prepared by coupling several dizonium salts with m-trimethylsilyl-and m-triphenylsilyl-dimethylaniline, it has been observed that most of the dyes have a fairly good substantivity for cellulose acetate, nylon, silk, and wool, but their lightfastness varies from moderate to good. Absorption spectra of some silicon-containing azo dyes have been compared





with those of the corresponding hydrogen and methyl analogues. The general bathochromic shift observed in the spectra of the silicon-containing azo dyes has been attributed to the crowding effect of the bulky $R_3Si$ group. An examination of the pH range of some silicon-containing azo dyes has revealed that the $R_3Si$ substituent does not have any favorable effect on the pH range of the dyes.

**The dyeing of textile fibers at high temperature**

L. Drijvers. *American Dyestuff Reporter 41,* p 539 (September 1, 1952).

The results arrived at industrially over 3 years enable us to conclude that a dyeing process at over 212° F ensures a whole series of advantages in regard to levelness, exhaustion of the bath, and elimination of irregularities of shade in mixtures of rayon from different sources. This last point will be important for the dyeing of rayon fabrics. The stability of the majority of fibers at these high temperatures has been proved; that of the dyes has likewise been made practicable.

There remains another important field to explore, a systematic study to be accomplished. For our part, we hope that the research that we have done and the experience which we have gained in this field will have contributed towards a new advance in the dyeing of textiles.

**Vat dyeing of acrylonitrile polymers using potassium ions**

Esther Meryl Griffiith (to E. I. duPont de Nemours & Company). U. S. P. 2,598,120 (May 28, 1952).

A process of dyeing an acrylonitrile polymer containing at least 85% acrylonitrile which comprises treating the polymer with an aqueous dye bath having a pH of about 10 to about 12.5 and containing from 2 to 32 equivalent weights of an ionizable potassium compound per 100 parts of the polymer, the equivalent weights being expressed in the same units as the parts and in solution a reduced vat dye selected from the group consisting of indigo and thioindigo vat dyes.

## SPECIAL FINISHING F

**Flameproofing treatment**

Wm. L. Dills (E. I. duPont de Nemours and Co.). U. S. P. 2,607,729 (August 19, 1952).

Composition for rendering rayon textile materials flame resistant, comprises a solid, dry, aqueous media-soluble composition consisting of

a reaction mixture of titanium oxychloride with an antimony compound.

**Copper 3-phenyl salicylate—a textile preservative**

E. E. Perrin, *Rayon & Synthetic Textiles 33*, 540 (September 1, 1952).

Recent tests by the Dow Chemical Co. and other industrial laboratories have demonstrated that copper 3-phenyl salicylate is a nonirritating, nonsensitzing fungicide and bactercide. It has been approved by the U. S. Government for use on duck and twill, for which purpose 1.25 plus or minus 0.25 per cent of material on the weight of the fabric is specified.

Tests indicate that the compound should prove important as a preservative for tents, tarpaulins, and other outdoor canvas and duck equipment.

Laboratory and field tests have shown that copper 3-phenyl salicylate effectively controls the organism causing the rotting of cotton fabric and the growth of mildew on the fabric. Outdoor exposure in southern Louisiana for six months of treated cotton fabric developed no mold growth, and soil burial tests proved that this treatment effectively protects the fabric from rotting.

Copper 3-phenyl salicylate may be dissolved in a mixture of organic solvents. The goods are passed through this solution, squeezed, and dried. The material may also be easily applied as a dispersion in water. The following formulation is suggested.

| | |
|---|---|
| Copper 3-phenyl salicylate | 50 parts |
| Methocel, 1500 cps | 2 parts |
| Triton X-100 | 2 parts |
| Cold water | 112 parts |

This mixture is ground to a smooth dispersion in a ball mill, homogenizer, or colloid mill, and applied to the fabric by padding and drying.

Copper 3-phenyl salicylate may also be produced on the fabric by a two-bath process. The goods are first padded through a water solution of sodium 3-phenyl salicylate and then through a water solution of copper acetate.

The effectiveness of copper 3-phenyl salicylate can be prolonged by the use of certain resinous beinders, or by water repellent treatment.

**Finish for cellulose fabrics**

B. P. 672,673, Jos. Bancroft and Sons Co.; *J. Soc. of Dyers and Cols. 68*, 328 (August, 1952).

Cellulose fabrics are rendered water-, crease-, spot-, and shrink-resistant and at the same time





lustrous and softer handling by impregnating them with 70-90% on their dry weight of a 5-20% soln. of water-soluble thermo-setting resin-forming materials and an acid catalyst, drying, cooling, calendering at 100-200° F., and then baking at 250-350° F. for 8-2 min.

**Stabilization and shrinkage control**

W. A. Wardell. *American Dyestuff Reporter 41*, 546 (September 1, 1952).

A pioneer in the field of marketing resin finishing agents explains how shrinkage control and fabric stabilization were developed as important by-products of crush resistance. He then goes on to discuss textile-finishing processes and especially the effect of each on dimensional changes. By means of a large table he shows how each finishing process affects the many properties of dyed and finished materials of natural, manmade and synthetic fibers. The most important feature of the paper is a discussion of just how various resin finishes can be employed to obtain the balance of dimensional stability, handle, crush resistance and other properties that are important for the sale and use of textiles.

**Heat-treating machine for textile material**

Werner P. Rose (to Werner Machine Company, Inc.). U. S. P. 2,599,486 (June 3, 1952).

In a synthetic fabric setting machine, a vertically extending frame, a first treating roll journalled on the frame, an infrared radiant heating element extending through the roll to radiantly heat the roll and its heat treating surface thereof, a second heat treating roll journalled on the frame above the first heat treating roll, an infrared radiant heating element extending through the second heat treating roll to radiantly heat the same, the heat treating rolls being thereby so arranged as to receive a synthetic fabric in such a manner as to first treat one side of the fabric with the first roll and the opposite side of the fabric with the second heat treating roll, means responsive to the temperature of the treating surfaces of the respective rolls for controlling the operation of the respective heating elements whereby to maintain a controlled constant temperature of the respective roll treating surfaces, means for delivering fabric over the rolls and for collecting the treated fabric at the opposite side thereof, the means for driving the rolls comprising an adjustable motor gear unit having variable speeds, large gears secured to the respective heat treating rolls and meshed with one another, a shaft journalled on the frame, means

operatively connected between the shaft and the motor gear unit for driving the shaft, and a pinion gear on the shaft drivingly connected to one of the gears on the heat treating rolls.

**Mildew-proof cellulose**

Monroe Couper (Institute of Textile Technology). U. S. P. 2,609,270 (September 2, 1952).

A method for mildew proofing cellulose comprises immersing the cellulose in a solution containing a compound such as N-(3,4-dichlorobenzyl) pyridinium chloride, drying the cellulose and heating it to a temperature from 100 to 200°C. to cure the product.

**Process for rendering proteinaceous textile materials water repellent**

Arnold M. Sookne and Alfred E. Brown (to Harris Research Laboratories). U. S. P. 2,599,590, June 10, 1952.

Process for rendering proteinaceous textile materials water repellent which comprises applying to the proteinaceous textile material an aqueous solution of water-soluble fatty acid soap in a concentration of about .25% and thereafter applying to the material an aqueous solution of a water-soluble aluminum salt in a concentration of about 0.1%.

## TESTING AND MEASUREMENT G

**Loading capacity of elongated rayon qualities**

Eliz. Luyken. *Melliand Textilber. 33, in German,* 767-70 (1952).

Investigations were carried out on the relationship between the loading capacity of rayon qualities which had been elongated to a prescribed degree, and variations in climatic conditions. During these investigations, the room temp. was maintained constantly at 20° C. and the relative atmospheric humidity at 65%. It was possible to detect certain relationships with the course of atmospheric pressure and temperature of air close to the earth and especially of atmospheric layers at higher altitudes. The results seem to indicate that further influences are exerted by the origin and the course of the atmospheric masses acting upon the rayon. Of the investigated rayon qualities produced from regenerated cellulose, cuprammonium and viscose rayon showed a certain monthly rhythm in the degree of load, and a behaviour which is dependent upon the time of day.





## Instruments and Instrumentation G 2

**A modified Pressley test**

R. K. Toner. *Textile Industries 116,* p 176 (September, 1952).

Among the variables which affect the reliability of a Pressley test are differences between clamps, operators, tensile testing machines, the wrench torques applied, spacings between clamps, variety of cotton tested, etc. These variations can be reduced by using the Pressley clamps on the Instron tester, provided a clamp spacing of 5 mm is used.

**Factors affecting rayon fabrics**

Lake H. Jameson, Benj. L. Whittier and Herbert F. Schiefer. *Textile Research J. 22,* 599-608 (1952).

The effects of warp tension, number of filaments, and luster of viscose warp yarns, and the effects of number of picks and denier of viscose filling yarns of 32 woven fabrics on the weight, construction, breaking strength, and elongation of yarns, and on the breaking strength, elongation, tearing strength, crimp, seam slippage, crease recovery, resistance to abrasion, and air permeability of fabrics were evaluated.

**Tensile tester**

Richard R. LaTorre and Thos. W. George. U. S. P. 2,608,857 (September 2, 1952).

A mount for tensile testing yarn or sheet material comprises a metal sheath having a partially serrated internal surface and disposed about a cross-section portion of the yarn or sheet and having solidified cellulose caprate in the sheath surrounding and adhering to the specimen.

## TEXTILE MILLS H

**A new "fluorescent ink"**

Anon. *Textile Manufacturer,* page 437 (August, 1952).

See front section of September 1952 issue.

**Few mills pension hourly wage workers, but number is growing**

Anon. *America's Textile Reporter 66,* 13 (October 2, 1952).

Only 39 per cent of textile companies included in a recent survey of 500 firms in different industries employing 2,500 or more employees during 1949 maintained pension programs for their hourly wage worker. There are numerous types of retirement programs either already in force

or currently being contemplated by textile companies. These range from the so-called "qualified profit-sharing plan and trust" to funded pensions; from systems to which the workers contribute a share of their stipend to some in which the companies bear the entire cost. There are "pay-as-you-go" plans and "terminal funded programs."

**Lubricating training program**

Anon. *Textile Industries 116*, 179 (September 1852).

Because of the significance of the textile industry in the South and the numerous problems encountered in the maintenance of its machines, one entire morning of a recent ten-day lubrication engineering course presented at the Georgia Institute of Technology in Atlanta was devoted to the subject "Textile Machinery Lubrication."

Sponsored by the American Society of Lubrication Engineers and conducted by the School of Mechanical Engineering of the Engineering Extension division at Georgia Tech, the course also provided training in such subjects as hydrodynamic theory, practical bearing design, hydrostatic theory, bearing materials, lubricant, lubricant dispensing, recent lubrication developments, lubricant technology, anti-friction bearing and gear lubrication, and plant organization for lubrication.

**Pro and con of pension plans and profit-sharing systems**

Anon. *America's Textile Reporter 66*, 35 (October 2, 1952).

A recent survey of 500 companies employing 2,500 or more employees in 1949 showed that 74 per cent of their number maintain pension programs for hourly workers. However, for those of the 500 companies which are engaged in textile manufacturing, the corresponding proportion was only 39 per cent. The chief reason for both the relatively small percentage of companies maintaining any type of plan and the preponderance of pension systems financed out of profits is of course, the historical fluctuation of earnings in textile manufacturing.

**Spiral plate heat exchangers**

Anon. *Textile Manufacturer*, page 394 (August, 1952).

See front section.





**Textile insurance coverage runs to uncalculated billions**

Anon. *America's Textile Reporter 66*, 15 (October 2, 1952).

Complete coverage of every phase of textile manufacture, from fiber to fabric (in actuality, from raw material to end use product) for unpreventable loss or destruction from any of many and various causes uncontrollable by management forms an indispensable prop in the background of the whole textile financing and banking setup. Just one group, for instance, the Associated Factory Mutuals, composed of only nine fire insurance companies, seven of them in Boston and Providence had in force almost $7,500,000,000 of textile mill coverage at the close of the first half of this year.

**Training and communications**

Staff. *Textile Industries 116*, 149 (September, 1952).

More than a thousand foremen, personnel people, superintendents, and other representatives of industrial management met July 16-19 in the Blue Ridge Assembly in the North Carolina mountains to listen to twelve prominent authorities on various phases of industrial relations and to discuss among themselves the problems brought before them during the past year.

At this thirty-third annual session of the Southern Industrial Relations Conference, two aspects of industrial relations soon shone as the most important to the audience.... training and communication.

**The Gaffney Manufacturing Company, Gaffney, South Carolina**

Anon. *Saco-Lowell Bulletin*, pages 10, 12, 14, 15, 16, 18, 22 (June, 1952).

See front section of September 1952 issue.

**12 new students registered at ITT**

*Daily News Record* (September 16, 1052).

See front section.

## CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

**Accelerated weathering of textiles**

J. D. Dean, C. M. Fleming and R. T. O'Connor. *Textile Res. J. 22*, 609-16.

The degradation effects produced in cotton and other textile fibers by unfiltered light from a "Sunshine" type carbon arc lamp were compared with those which occured in identical materials

during natural weather exposure tests, in which sunlight is believed to be the chief degrading factor. These comparitive tests were designed to afford needed information about the action of short wave radiation on textiles, and to evaluate the practical unity of such radiation in accelerated weathering techniques.

**Action of cyanuric chloride on cotton cellulose**

Jane Warren, J. D. Reide and Carl Hamainen. *Textile Res. J. 22,* 584-90 (September, 1952).

A rather large excess of cyanuric chloride is necessary to introdue as much as one triazine nucleus per two glucose residues. Although the amount of chlorine retained is less than the theoretical amount calculated if one chlorine atom remained for each triazine ring introduced, the residual chlorine could be reacted with amines. Some limited results obtained in general studies of the chemical and tensile properties of the derivatives are included.

**Analysis of dyers for man-made fibers**

Alfred F. Schneid. *American Dyestuff Reporter 41,* 565-72 (September 15, 1952).

This article presents an outline of procedures to be followed for the analysis of a dye for acetate, nylon, or other man-made fibers of unknown composition.

**Double refraction measurements of fibers**

H. deVries. *Textile Res. J. 22,* 619-20 (1952).

An improved method for measuring the refractive index and birefringence of fibers has been developed. Use is made of the diffraction of white light by yarn wound on a frame so as to form a grating, which is immersed in a series of liquids whose chromatic dispersion curves intersect those of the fiber substance in the visible light. The apparatus is described.

**Determination of melamine resin deposits in cellulosic fibers and fabrics**

H. A. Wannow. *Melliand Textilber. 33, 758-61, in German* (1952).

The presence of durable resins such as melamine-formaldehyde incorporated in cellulosic textiles can be determined with the aid of dyestuffs which have affinity for resins, or with Tollen's reagent. Whereas these methods give valuable information when examining under a microscope the presence of resins incorporated in individual



fibers, microscopic examination of the microtom cross-sections of fabrics give no indication of the uniformity of the resin deposits. On the other hand, it is possible to reach conclusions regarding qualitative data by examining the straining of the finished piece goods.

**Determination of the swelling power of cellulose**

K. Kruger. *Rayon Synthetica Zellwolle 29,* 405-7 (1951) *in German; Brit. Cotton Ind. Res. Assoc. 32,* 611 (August 30, 1952).

A simple device resembling an ordinary office hole-punching machine, is described for obtaining sharply defined discs from cellulose sheeting for testing purposes.

**Effect of temperature of prepn. on the mech. properties and structure of gelatin films**

E. Bradbury and C. Martin. *Proc. of the Royal Soc. 214,* 183-92 (1952).

Gelatin films prepared by evaporation from aqueous solution at temperatures of 60° C. and above differs considerably in structure and mechanical properties from films dried slowly at 20° C., when gelling precedes dehydration. In the high-temperature prepn. dehydration precedes the formation of a continous structure, and x-ray and other evidence indicates that the molecular chains are in a disordered contracted state not far removed from their condition in the sol. The high-temperature film is characterized by low strength and high recoverable extension under conditions of high relative humidity. In the low-temperature prepn., the greater degree of crystallization has partially extended the molecular chains, and the undirectional contraction of the film on drying has oriented them in the plane of the film. This film exhibits thermal contraction in hot methanol, and is stronger, but at high humidity is much less extensible, than the high-temperature prepn.

**Fabric soiling**

R. E. Wagg. *J. Textile Inst. 43,* T325-37 (1952).

The redeposition of soil from some detergent systems was studied and the results here reported. Part I is concerned with aqueous systems which contained synthetic detergents alone or with additives. Part II is concerned with non-aqueous systems such as Stoddard solvent and trichlorethylene.

# 11

# Textile Highlights of The Month

Textile Reader's Digest

### HOW JOANNA COTTON MILLS IMPROVED OPENING ROOM SAFETY, EFFICIENCY AND APPEARANCE

Marked improvement in opening room safety and efficiency, through the use of modern equipment and intelligent planning, is reported by Joanna (S. C.) Cotton Mills. The acquisition of a Micronaire to grade cotton scientifically (the system of labeling cotton according to fineness), and an ingenious technique of feeding machines a balanced diet of expertly blended cotton, all have combined to bring about notable opening room improvements and smoother running work throughout the plant.

In the past as many as 150 bales of cotton were often opened up and used to feed the blending machines at Joanna. This obviously created fire hazards, requiring careful attention to insure adequate protection from flash fires.

**Quality of the blend** of cotton sent to the picker room was greatly improved with the acquisition of a Micronaire, which scientifically checks the cotton entering the mill and accurately and economically grades each bale according to the fineness of the cotton. Though the coarse and fine fibers of cotton were put down in properly proportioned units and blended to give greater uniformity of operations throughout all departments of the mill, there was still some uneven running in the picker room because the blending machines were fed for 24 hours from bales of cotton placed on the floor during the day, and by morning the wide selection was exhausted. Also, most of the cotton fed at one time to the blenders would be from the tops of the bales—usually light and fluffy. As the tops were used and the center of the bale approached, the cotton became firmly packed; then the last of the bales would usually feed light, fluffy cotton again. Thus, a measure of unevenness still existed despite the accurate classification the Micronaire permitted—and the floors were still cluttered fire hazards.

To combat this situation, a system of using five primary colors to denote various finenesses of cotton aided in the proportioning of cotton in the blenders. Sixteen machines, each bearing one of the five primary colors, were fed cotton from bales bearing a matching color, the colors being assigned according to fineness, ranging from coarse to fine. By use of the color system, placing the proper bale before the machine was a simple matter. Cotton from these machines was blended to give an average Micronaire reading of 4.35.

**Introduction of a system** whereby the blending machine would be fed from four bales of cotton—one of which was full, one three-quarters full, one one-half full and another only one-fourth full—provided the final step in producing a uniform blend of cotton at all times. This gave an even blend of fluffy top and bottom cotton with firmly-packed center-bale cotton in each machine. Instead of a disorderly mass of bales, there were neat rows of four bales on pallets before each machine. As the balê to the machine was used, the pallet was slipped out, the other three were brought forward and a new bale was placed behind them, again giving the graduated bales from one-quarter full through one-half and three-quarters to the full new bale. Replacing of bales is further simplified by an overhead carrier which picks up a bale from a storage area marked with the color denoting the fineness of the cotton and carries it to the opening line in which it is checked and then dropped in place by means of a chain hoist and special crane. As this process goes on around the clock, a uniform blend is produced night and day. (*Textile Bulletin 78*, October, 1952.)

### COLOR MEASUREMENTS IN LESS THAN 30 SECONDS

The "Colormaster Differential Colorimeter," an instrument for obtaining accurate color measurements of synthetic fibers, liquid solutions, pigments, slurries—any substance, in fact, where color is an important factor—is now available.

A complete set of color measurements can be made with the Colormaster in less than thirty seconds. The instrument has a system sensitively appreciably greater than the eye can discern, and is particularly useful for measuring differences between similar colors for process control applications. Results are taken directly from an easy-to-read dial.

Manufacturers Engineering & Equipment Corp., Hatboro, Pa. *Textile Industries 116*, 158, November, 1952.)

### WHERE ARE WE GOING IN BLENDS?

The excitement over the newer man-made fibers and their potentialities in blends shows no

signs of subsiding. Although the newer fibers have been getting most of the attention, there also have been new developments of great significance in Rayon and Acetate blends. It can be said with absolute accuracy that Rayon and Acetate are better than ever. Burlington Mills has blended Rayon and Acetate staple with 15 per cent nylon in a cloth which is demonstrating its ability to capture customers in men's outerwear, boy's suits and stormcoats.

Deering, Milliken & Co., Inc., has greatly improved the 60 per cent wool 40 per cent Rayon fabrics which it has been turning out for more than a decade. Known as Cadogan fancies, these cloths now look better and wear longer because of improved dyeing techniques and more uniform yarns developed by Milliken. The company has also a 50-50 Rayon-Acetate blend to compete with far more expensive worsted fancies. This yarn-dyed fabric with a soft worsted hand, sells for $1.25 a yard in the 8½ ounce, 60-inch fabric and for $1.70 a yard in 12½ ounce weight.

In recent months, a new 14-ounce worsted suiting fabric of 75 per cent Rayon and 25 per cent Vicara, selling at $1.95 per yard of 60-inch goods has been attracting favorable attention as a material for men's suits. It is a product of Mooresville Mills.

Mooresville has another interesting new blend using Rayon, but this time combined with 15 per cent Nylon. Like the Vicara blend, this cloth is 14-ounce, 2-ply, warp and filling, 60-inches wide, vat dyed. Selling for $1.65, the fabric, according to Mooresville, takes water resistance finishes nicely.

In the field of lighter weight fabrics, Mooresville has added 15 per cent Nylon to a Rayon 8½-ounce tropical fabric. This 45-inch fabric, yarn dyed with vat colors, priced at $1.05 a yard, has a crisp hand and high wrinkle resistance.

Robbins Mills has combined Dynel with Rayon and Acetate to manufacture a highly salable 14-ounce fabric for boy's suitings and outerwear garments. Utilizing 15 per cent Dynel, the cloth is reported to give warmth without bulk, while presenting a soft, tweedy hand.

Beaunit Mills is blending Bemberg staple with Orlon on a 50-50 basis to produce a 7-8 ounce flannel woven with two-ply warp and filling yarns. This suiting with plaid effects is aimed at the womenswear market. Beaunit is also combining Bemberg staple with Acetate and with Viscose to produce some interesting fabrics with the fine wool-like hand that is characteristic of Cuprammonium Rayon.

American Woolen Company is offering its customers three menswear suitings of wool combined with Orlon. The first is a tropical fabric blended of 55 per cent Orlon and 45 per cent wool selling at $3.25. The second is a 45 per cent Orlon 55 per cent wool textured "crash" at $2.95. A crash is a plain woven fabric with a rough surface, achieved by using uneven yarns. The third fabric is a flannel of 40 per cent Orlon and 60 per cent wool.

The successful blending of Orlon with wool has also been achieved by Bachmann-Uxbridge Worsted Corp., which this autumn introduced a men's flannel suiting of 40 per cent Orlon and 60 per cent wool in shades of blue, brown and gray. The fabric comes in two weights. An 11-11½ ounce cloth woven on the woolen system sells for $3.47½ while a 7-7½ ounce fabric, woven on the worsted system, sells for $2.87½.

For men's tropical suiting, Orlon is also being combined with Rayon by Mooresville Mills in a blend of 40 per cent of the acrylic fiber combined with 60 per cent of the cellulosic material to sell for $1.70 per yard. Mooresville will shortly bring out a blend of 50 per cent Orlon and 50 per cent cotton for shirtings and dress goods.

Pacific Mills is currently offering a 65 per cent Dacron 35 per cent wool sheen gabardine in a 12½ 13-ounce weight. This top-dyed fabric is priced at $4.22½ per yard. The company is also marketing a 9-9½-ounce tropical blend of 62 per cent Dacron and 38 per cent wool in plain and patterned weaves to sell for approximately $3.28 per yard.

Deering, Milliken has won wide acceptance among garment manufacturers and consumers for its 55 Dacron 45 wool, 8½-ounce tropical suiting which it has named Visa. Milliken also makes this fabric in a 10 to 11 ounce all-year-around weight.

When first introduced the fabric was made into suits by Hart, Schaffner & Marx only. For the 1952 season, Milliken increased its outlets to eight suit and three slacks manufacturers. In the coming year, 15 suit manufacturers will be cutting garments of this Orlon-wool fabric in price ranges running from $50 to $100. During 1953, Milliken expects to increase its shipments of this cloth to approximately 180,000 yards. It sells from $3.50 to $4.00 per yard. In the womenswear field, the latest Milliken addition is Lorette, a 55 Orlon 45 wool blend in weights from 7½ to 9½ ounces, priced from $2.50 to $3.25. It is being marketed for use in women's dresses and skirts. Under the name Stabilon, it is also being used as a men's shirting. Jerome Campbell. *Modern Textile Magazine 33*, 31, 47,48 (November, 1952).

## HOT AIR SLASHER FEATURES HIGH PRODUCTION, LESS SHEDDING

A new hot-air slasher, designated the "Ari-Dri," for slashing natural and synthetic staple fibers offers these advantages:

(a) Greatly increased production with little increase in space requirements up to 1500 pounds per hour.

(b) Wet splitting of warp before it enters the drying chamber, reducing shedding at the slasher head end.

Centrifugal blowers force air past heating steam coils and through nozzles which distribute warm air evenly and softly across the warp. Yarn is 40% dry by the time it reaches the first guide roll because of the wet splitting prior to entering the drying chamber which is completely enclosed and insulated.

West Point Foundry & Machine Co., West Point, Georgia. (*Textile Industries 116* 113, November, 1952.)

## INCLINED ROLL STANDS HIGHLIGHT WHITIN ROVING FRAME

A new Superdraft roving frame for the processing of worsted, synthetic, and blended fibers in lengths from 2 to 7 in. has been developed by Whitin Machine Works, Whitinsville, Mass. It has been named the Model G10D Superdraft frame.

There are several important features of the new frame. One of these is the inclined (30° angle to the roller beam) roll stands. This arrangement allows for (1) the easier cleaning of rolls, cradles, saddles, and aprons of the drafting assembly and (2) closer twisting up to the nip of the front rolls of the roving in process.

The inclined roll stand stands higher above the roller beam than the roll stand of previous models of frames. The center of the bottom front roll is 6 in. above the roller beam.

**The drafting zone** is divided into two fields. Over-all back-to-front roll spread extends up to 14 in. Bottom-roll diameters, from back to front, are 1½, 1½, and 2 in. Top-roll diameters, from back to front are 1¾, 1¾, 1, and 2½ in. Top rolls are Climax ball-bearing synthetic covered rolls. All four lines of bottom rolls are equipped with antifriction bearings.

Elimination of dead weighting of rolls has been accomplished by the use of a new type of springs that are guaranteed to not vary in total pressure more than "within close limits." Exact weighting requirements are maintained by a tension-unt adjustment at the base of the spring.

By means of the saddle, a lever, and fulcrum (easily adjustable), the distribution of weight between the second and third lines of rolls can be varied to mill and fiber requirements.

Other innovations on the new frame include a variable-speed lifter-rod drive for passing the sliver from the cans up to the drafting area, a jog switch that allows the flyers to be turned a partial turn only to facilitate piecing up or doffing, an electrically operated shipper switch, easily reached hand wheels for the rack wind-back and for lifting the bottom cone, a limit switch that prevents the traverse from overrunning the bobbin at either top or bottom, an 8-hr. back-trumpet traverse-motion cycle, a full-bobbin knock-off switch, a doffing rack for flyers, and one-shot lubrication. (*Textile World 102*, 171-172, November, 1952.)

## DuPONT'S BAROTOR

Considerable trade attention is focused on the Barotor, a recent development of the Du Pont Co., as it holds promise of answering many of the problems which have long beset textile dyers in connection with dyeing and finishing of synthetic as well as natural fibers. With regard to the general advantages of pressure in the aqueous dyeing of the new fibers, yarn, raw stock and knit goods have been the first to benefit. Their developments have been natural ones with minor changes in current machines, or at best, the design of new machines with a minimum of departure from traditional practices.

The "Ideal" dyeing machine has the following features:

1. Fabric is open width at all times;
2. Tensionless and wrinkle-free;
3. All points in uniform and frequent bath contact;
4. Operability with all fabric constructions, both filament and spun;
5. Handling of batches as small as 100 yards and batches in excess of 1,000 yards;
6. Rapid bath agitation or circulation;
7. Wide range of bath ratios permissable;
8. Exact duplication of conditions between laboratory and production scale;
9. No need for attention during dyeing;
10. Fabric sampling and bath additions made without opening the vessel or losing pressure;
11. Samples always representative of entire fabric;
12. Essentially cylindrical in shape for 100 per cent utilization of the lowest cost pressure vessel;

13. Minimum cost of operation and maintenance;
14. Investment commensurate with productivity in comparison with atmospheric dyeing of natural fibers.

These features are said to be combined in the new Barotor machine, which is far from final development. According to the Du Pont Company, it needs the refinement of the textile machinery manufacturer and the experienced touch of the practical dyer.

**The semi-commercial Barotor** operates up to 25 pounds gauge pressure. The exterior is nothing more than a simple horizontal autoclave. The remainder of the vessel, for saving of building space in its current installation, projects outdoors through the wall. All of the operating equipment and instruments are within the building. There is a single driven shaft passing through the center of the head. This shaft turns at low speed and is sealed like any agitator shaft. A large carriage mounted on tracks in front of the autoclave removes the head and interior fabric holder for loading and unloading.

The heart of the dyeing machine is a large rotor, filling the autoclave and using all the space. It extends across the width in the form of relatively thin bars. Fabric is loaded on the rotor in a threading process. This rotor is six feet in diameter, a size which is classed as semi-commercial. It was designed for 600 yards of 65-inch material. A fully commercial size unit might be nine feet in diameter and hold approximately 1,400 yards of fabric. Additional capacity can be obtained by using a long autoclave with two or more rotors on the same shaft.

When the vessel is closed, the dye liquor is added to the desired depth. One quarter of the diameter is convenient, but more shallow depths are said to be satisfactory, and the vessel in the other extreme can be completely filled with dye solution if desired. The range of bath ratios thus permitted with an average fabric load is a minimum of 4:1, and a maximum of 160:1.

**The operation** of the mechanism can best be described in the threading process, which on the rotor, employs 64 sets of supporting bars, on the semi-commercial model. There is a set of bars that are retained in slots at the periphery of the rotor heads. There is another set of bars located at the interior end of "J"-shaped slots. The fabric is on the outside of the exterior bars, and the inside of the interior bars. In this case, there are three complete wraps, the ends of each wrap having been joined together. All wraps are separated by spacer bars which are retained in the radical portion of the peripheral slots.

The rotor is turned by the shaft passing through the head of the vessel, with gravity doing the rest. As each bar reaches a position approximately 60 from the horizontal, it rolls to the interior end of its slot. At the same time, another bar is passing the horizontal and rolls to the exterior end of its slot. The one bar thereby takes up the slack that is let out by the other.

In this manner, the fabric is made to progress forward relative to the rotor. All portions of the fabric have equal contact with the liquor regardless of how shallow the bath many be, and all portions may be made to pass through the bath several times a minute, and not just once every twenty minutes as with a jig. This is said to permit extremely rapid and continuous leveling, and permits, also, the dyeing to be carried out in minimum time.

**The amount of fabric** loaded on the rotor is such that each bar reaches the extreme outer end of the slot before all of the available slack is taken up. This is true even after shrinkage has occurred. The weight of the bars, is therefore, never brought against the fabric, and the fabric is never subjected to tension.

The fabric is sufficiently restrained at all points, however, to permit no freedom for folding. Several hundred dyeings have been made on a laboratory model of the Barotor, and there has not been any evidence of a tendency for the fabric to wrinkle. *Textile Age 16,* 14, 15, 16, 17, 18, October, 1952.)

## GERMAN DIRECT-SPINNING MACHINE ELIMINATES SPINDLE-TAPE DRIVE

At the most recent Hannover Technical Fair in Germany, Josef Pfenningsbery & Co. of Siemenstrasse 20 in M-Gladbach in the Rhineland showed a new two-level 60-spindle ring spinning frame that spins cotton direct from drawing sliver, with drafts up to 130. In addition to the high draft, elimination of the standard spindle-tape drive was another feature.

To get the needed free area in the center of the frame to allow the sliver to be raised up from under the frame to the top drafting rolls on the 2½-ft. wide machines, the standard tapes and driving cylinder were eliminated. The spindle-driving medium instead consists of an endless tangential belt that circles both ends of the frame in an enclosed area and drives the spindles directly by means of pressure applied by alternating vertical tension rolls located immediately behind the spindles.

**One German spinning mill,** constructed for direct spinning of sliver to yarn, has been running 12,000 spindles of this type for a year and is said to have "best results."

The drafting system of the frame is set up at an angle of 55°—what is said to be a very favorable angle for spinning. It is a five-roll drafting unit with a single apron, provided with modern pendulum-type saddles that need no lateral guidance.

The frame is suitable for large bobbins and cops up to nearly 12 in. long. The standard frame has a 3 3/16-in. spindle gauge with 2-⅜-in. rings, or a 3⅛ spindle gauge with 2-3/16-in. rings.

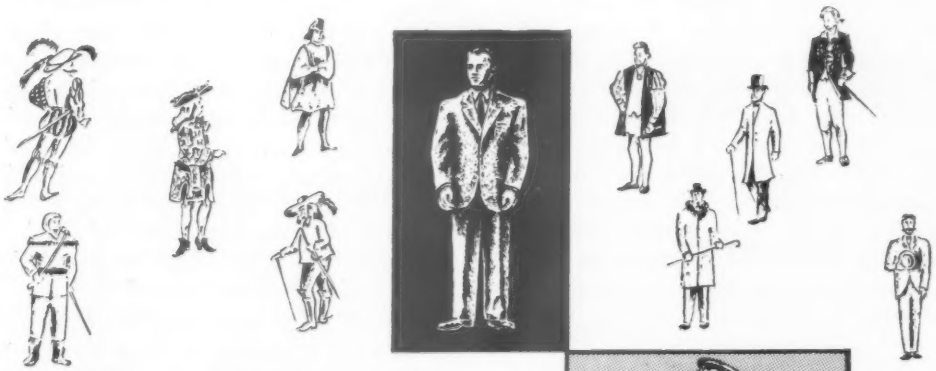
The driving arrangement of the frame is said to be so simple that it can be taken care of, including changes of twist and yarn number, by unskilled help after a very short period of training.

Other advantages of the new frame are (1) elimination of all flyers in the making of yarn, the sliver merely being divided in two at the last passage of drawing and fed from the same can to two spinning spindles instead of one; (2) a full 9-in. sliver-can life of almost 200 hr. of direct spinning; (3) the elimination of all creeler hands except one of every 12,000 spindles; (4) no creel on the frame to obstruct vision around the spinning room; and (5) automatic overhead cleaning system easily installed and made efficient. (*Textile World 102*, 182-184, November, 1952.)

## INDIVIDUAL COTTON CARD DRIVE UTILIZES TIMING BELT FOR POSITIVE ACTION

An individual drive for cotton cards to replace group line-shaft drives in the card room offers these advantages or savings:

(1) Safer and easier to operate than conventional drive.
(2) Allows for individual arrangement of cards to best suit availability of space.
(3) Eliminates line shafts and costly maintenance problems they present.
(4) Simplifies starting and reversing.
(5) Eliminates card group shut downs.
(6) Requires less floor space.
(7) Patented SS-Gilmer Timing Belt Drive arrangement gives all advantages (constant speed-output, etc.) of positive drive with none of the disadvantages.

*No One Man* can bring you
1000 years of experience

—but a firm of *Engineers* can with great benefit to you*

*J. E. Sirrine Company has 45 Senior Engineers and Architects with an average of 30 years of professional practice, 40 Associate Engineers with a 14-year average and 37 Junior Engineers with an average of 3 years. This total of 2021 years of professional engineering practice makes up the background of experience that J. E. Sirrine Company draws on for your project.

Forty keen minds,* each with twenty-five or more years' experience, delving into the applications of his specialty and supported by an able staff of associates, can bring together a valuable aggregation of diversified experience.

In a well-rounded group of Engineers, these will never be captive minds confined to a single industry or company, but free and enterprising specialists who garner, select and adapt their experience to many different industries. They bring the flow of freshness and originality to plans and designs and thereby further your drive toward progress and preparedness.

The earlier you consult the Engineer, the more far-reaching the benefits you derive.

*Engineers for 50 years* . . . J. E. SIRRINE COMPANY
GREENVILLE • SOUTH CAROLINA
A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING WORLD-WIDE INDUSTRY

A standard 1½ hp, 1200 rpm, lint-free motor with splined shaft is utilized. Mounted upon this shaft is a cut tooth driving pulley with splined bore, with a cast iron belt guard mounted thereon. This belt guard is connected to a stop bracket controlling extreme limits for shifting. It also has two spring stops for positioning when driving to loose pulley and to tight pulley. Hand pressure on the shifter handle shifts belt from loose to tight pulley.

New narrow face tight and loose pulleys are furnished with drive to conserve aisle space.

Southern States Equipment Corp., Hampton, Georgia. (*Textile Industries 116*, 110, November, 1952.)

## THE PERKINS FIBRE CONDITIONER

A fairly new machine for mechanical removal of burr in woolen carding is the Perkins Fibre Conditioner. The web from the last scribbler doffer is passed through the fibre conditioner. It enters the machine at the bottom with the web in the normal compressed state and is drafted by three sets of 2½ inch diam. fluted rollers and then after being considerably reduced in thickness is passed between two pairs of crushing rollers, .003 inches apart, spring loaded to some 1400 lbs. These crush the burr and destroy the tendency for it to cling to the wool fibres. Having once disintegrated the burr into small particles by the bending action and the tension imposed by the fibre conditioner, these particles drop out in the carder section. The apparatus is 14 inches deep and 30 inches wide. It eliminates part of the vertical broad band conveyor and requires only 12 inches of aisle space. It is driven from the doffer cylinder and requires only one third H. P. to drive. It is manufactured by Hunt & Mascrop. (*Textile Industries and Fibres 18*, 320, October, 1952.)

## BEAM BRAKE PROVIDES IMPROVED TENSION CONTROL, REDUCES RUN-OUT WASTE

Improved yarn tension control and substantial reduction of run-out waste are advantages claimed for a beam brake for cotton slasher creels which was recently developed by Deering Milliken Research Trust.

For each beam in the creel a simple, mechanically sound, and reliable brake and needle bearing assembly is provided. A compact air cylinder holds out of operation a spring which operates the brake, allowing the beams to turn and the yarn to run smoothly from them with a minimum of tension while the slasher is up to speed.

A solenoid-operated air valve is employed to exhaust the cylinder when the slasher is stopped or slowed to creep speed, thereby bringing the spring into operation and applying a braking torque. The mechanism incorporates means for "fail-safe" operation in order to insure against yarn waste or machine downtime in the event of failure of either the power or air supply.

An outstanding feature is the fact that the brake is adapted to provide two levels of tension. While the beam set and slasher are running at normal speeds, a minimum tension is maintained on the yarns. When the operator is required to stop or slow down the slasher, sufficient additional braking is automatically applied to keep them from over running. When the slasher control lever is shifted to allow the slasher to resume normal operating speeds, the braking torque is automatically reduced and the yarn again runs in the desirable low tension condition.

Cocker Machine and Foundry Co., Gastonia, N. C. (*Textile Industries 116*, 156, October, 1952.)

## USING THE SILICONES AT WATER REPELLENTS

The name "Silicones" has been given to a group of new materials, developed through research, which are becoming increasingly important as water repellents, anti-foam materials, and greases of great value to the textile man.

DeCetex 104 is an example of a polysiloxane specifically for use on synthetic fabrics to impart water repellency using conventional curing equipment. It is a viscous, high-polymeric silicone supplied at a concentration of 65% solids in methylene chloride, which is a relatively nontoxic, noninflammable solvent.

DeCetex 104 may be applied from either an oil-in-water emulsion or from a solvent solution. An emulsion may be prepared by the mill using selected agents which do not cause exhaustion of the silicone onto the fabric, thus decreasing the silicone concentration in the bath. It is also important to use an emulsifying agent which will not cause back-wetting after the fabric is cured.

**Concentrated emulsion,** stable for periods of several days, can be easily prepared by using a colloid mill, homogenizer, or mixer having high shearing action.

The fabric to be treated is usually padded in conventional equipment with as high a nip pressure as practical in order to obtain maximum penetration of the fibers and to remove excess emulsion from the fabric. The amount of silicone necessary for maximum effectiveness varies

slightly with fabric construction and fiber content, but is generally obtainable with a pick-up of 1 to 2% silicone solids, based on the weight of the fabric.

Development of maximum water repellency is a function of time, temperature, and air velocity of the curing stage. Curing for 4 to 7 minutes at 300-320 F. is usually satisfactory for light and medium weight fabrics. Depending on the efficiency of the equipment being used, excellent results may even be obtained with shorter curing times. In fact, mixed fiber suitings have been very successfully cured in less than 2 minutes exposure to 350 F.

In the use of crease resistant resins with the silicone emulsion, it is not necessary to increase the silicone pick-up to obtain satisfactory results. The resin should first be mixed with a suitable catalyst and diluted to nearly normal padding concentration before addition of the silicon to maintain maximum emulsion stability. The combined application of resins and silicone should be dried, cured, and given an after-wash in the manner approved for the crease resistant resin.

The tear strength of most treated fabrics is markedly increased, in some cases as much as 50%, perpendicular to the warp. Preliminary tests made with the C. S. I Stoll Quartermaster Universal Wear Tester show that flex abrasion values of fabrics treated with crease resistant resins and a silicone water repellent are better than those obtained with the resin reated fabric alone. (*Textile Industries 116,* 159, November, 1952.)

## WHAT HAPPENS WHEN YOU SPEED UP COTTON CARDS?

Practically all carders are convinced that if they slow down their cards they will have fewer neps, better yarn appearance, and less card waste. But not many of them know how much.

The tests reported in this article were made to provide mill men with an answer to how much the carding rate affects neps, yarn appearance, and card waste.

Eleven varieties of American Upland cotton were tested in the carded-yarn series. In the combed-yarn series, eight Upland, one Egyptian, and two American Egyptian varieties were tested.

The USDA report gave specific results for each of the 22 varieties tested. To get a composite picture, Textile World reduced the USDA data to averages for card production at the rates of 6½, 9½, and 12½ lb. per hr. (and in the case of carded yarn, of 15½ lb. per hr.). This composite picture shows that—

—For carded yarns, as the carding rate increases:
  Neps increase steadily
  Yarn strength, yarn appearance, and card waste decrease steadily

—For combed yarns, as the carding rate increases:
  Neps increase steadily
  Yarn strength and yarn appearance remain level until after 9½ lb. per hr. and drop off sharply at 12½ lb. per hr.
  Card and comber waste combined remains steady

This composite picture, with the amounts of increase and decrease, is shown in the eight accompanying graphs labeled "Average for 11 Varieties." (P. M. Thomas, *Textile World 102,* 94 (October, 1952.)

## NORTH CAROLINA FINISHING CO. IS DYEING WITH HOT OIL

Vat and sulfur dyeings are being made on cotton work-clothes fabrics of 1.57 yd. per lb. average weight on a Williams hot-oil range at North Carolina Finishing Co., Salisbury, North Caro-


**WOOLEN & WORSTED**

***A Record of Service as Measured by . . . .***

| | |
|---|---|
| New Plants | 41 |
| Major Additions | 116 |
| Minor Additions, Reports, Appraisals | 346 |
| Total Engagements | 503 |
| Cost New Plants and Major Additions | $45,000,000 |

**LOCKWOOD GREENE**

ENGINEERS — ARCHITECTS

Boston 9, Mass. 40 Central Street
New York 20, N. Y. 10 Rockefeller Plaza
Spartanburg, S.C. Montgomery Bldg.
215 St. James Street, West, Room 601, Montreal, Canada

lina.

The range is equipped with the newer high-pressure Williams units that are capable of holding 125-lb. steam pressure that maintains the oil at 220 to 240° F. The company has found these units to be more effective and dependable for the high-temperature work than the older units.

Washfastness and lightfastness are as good as those obtained in dyeing by conventional methods. Crockfastness generally is good, the theory being that fixation is better in the oil-bath method and bronzing cannot occur.

Excessive oil is removed by passing the goods through a series of hot and cold wash boxes containing Igepal CA ex. high conc. Oil is removed by this method fairly easily at the beginning of a run, but results must be constantly checked because it becomes more difficult to remove the oil as the run progresses. The type and weight of fabrics have much to do with the ease of cleaning.

Vats are pigment-padded and dried in the conventional way, the pad process being followed by a caustic and hydro treatment in the first Williams unit. The fabric is then passed into the hot-oil bath. The excess oil, dye, and chemical residues are removed by a series of hot and cold washings.

Sulfur dyes are reduced in the first Williams unit by standard procedure and then passed into the hot-oil bath. Following a series of washings to remove the remaining oil, oxidation is accomplished with chrome and acetic acid. A further washing and soaping follows. (Anon. *Textile World 102*, 104 (October, 1952.)

## TEXTILE INDUSTRY PUBLIC RELATIONS CALLED POOR, NEW OUTLOOK NEEDED

Better access to management's views and side of controversial issues, like union negotiation, for communications media and the creation of better relation at even community levels. That was the "new definition of public relations proffered to a surprised, sometimes startled group of textile executives at the public relations panel held during the 98th annual National Association of Cotton Manufacturers meeting in New Hampshire recently.

The excellent panel, presided over by Douglass V. Brown, Sloan professor of industrial management, Massachusetts Institute of Technology, was composed of Harold Brayman, director of public relations, E. I. duPont deNemours & Co.; Herbert L. Baldwin, president of Herbert L. Baldwin Associates, public relations firm, and Frank Zacher, director of personnel, the Norton Company, Worcester, Mass.

Many of the nearly 300 members of the NACM who viewed the proceedings heard themselves criticized severely for their lack of knowledge of this vital part of today's economic activities. All three speakers roundly scored the textile industry for its negative policies regarding public relations in the community, with government and with the various communications media. They emphasized the importance of acquainting the mill community and surrounding areas with the role of the industry in the community picture.

Speaking on "How the Press Will Help in Public Relations," Mr. Baldwin assailed New England industry for having done the poorest job of public relations of any area in the United States. Although the textile industry has come a long way in its public relations since the days of the first Lawrence strike, he said, it, along with other industries, is still in the primary school stage.

Mr. Baldwin, former public relations director of the Boston and Maine and New York, New Haven and Hartford Railroads, and now head of his own public relations group, stressed the need of frankness with the press to facilitate full coverage of the mill side of the story. He painted a typical textile situation where, during a period of union activity, or the presentation of various sides of the union picture, the questioning of a mill executive invariably results in an uncompromising "no comment" from the mill head.

He repeated an often asked question by friends, "how is it that the papers print the entire union story but nothing from the mills?" The public relations man then warned that as long as management has no comment, the opposition will have an easier time of selling their own ideas.

Even though the newspapers are anxious to print management's views, the sparse information obtainable usually comes at a time when the whole community is in distress and thus is insufficient to overcome the tremendous barrage prepared by the unions or opposition, he said.

In answer to the criticism of some mill men who prefer not to release all the developments of union negotiations to the press, Mr. Baldwin said that although this might be preferable, some form of rebuttal must be used to counteract the trying of cases in the press by union groups.

Mr. Baldwin closed his remarks by citing the need for making the public relations department something more than an agency for distributing basic information about the concern. "If you don't make your public relations department a part of your management, and again I repeat,

not necessarily a policy-making part of it, but an integral part that participates in management's discussions and gives advice in management's decisions—don't establish it, because you are just wasting your money," he declared.

Earlier, he scored the management view that public relations is "something you can turn on and off at will like a faucet." It has got to be a continuous effort, a 24-hour a day job, 365 days in the year. In this regard, the public relations leader paid tribute to the unions and employee organizations for having done the smartest public relations job ever seen in this country.

The value of newspaper background in public relations was cited for the textile executives, since the public relations man must get along with the newspapers and be familiar with editorial thinking. Unless an outstanding, experienced and well-informed public relations man is secured, Mr. Baldwin asserted, the job cannot be completed in an efficient manner.

Mr. Brayman, the du Pont public relations director, said that the major problem facing business was that of overcoming public misunderstanding and hostility. He is a former Washington correspondent, syndicated columnist and top political reporter.

Public hostility toward business "demands and frequently gets, government action antagonistic to enterprise," Mr. Brayman said. Unless the problem is solved, he claimed, the biggest loser will be the great mass of Americans "who, in accepting a state-dominated economy, will lose not only their precious American freedom but also their much-vaunted American standard of living."

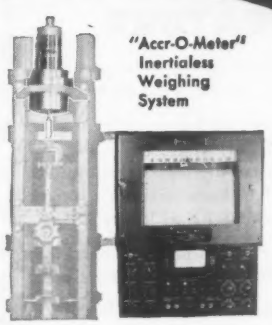
The du Pont executive told the textile manufacturers that industrial leaders are "the heart and soul of industry's public relations."

"The business leader must speak up, he said. "His is the voice of industry. If he does not speak up, industry has no voice."

Mr. Brayman advocated use of the "precinct system" in which each company accepts responsibility for adequate public relations in its own locality. He said this is necessary because "confidence in the source from which information comes is a vital ingredient" in any effort at persuasiveness.

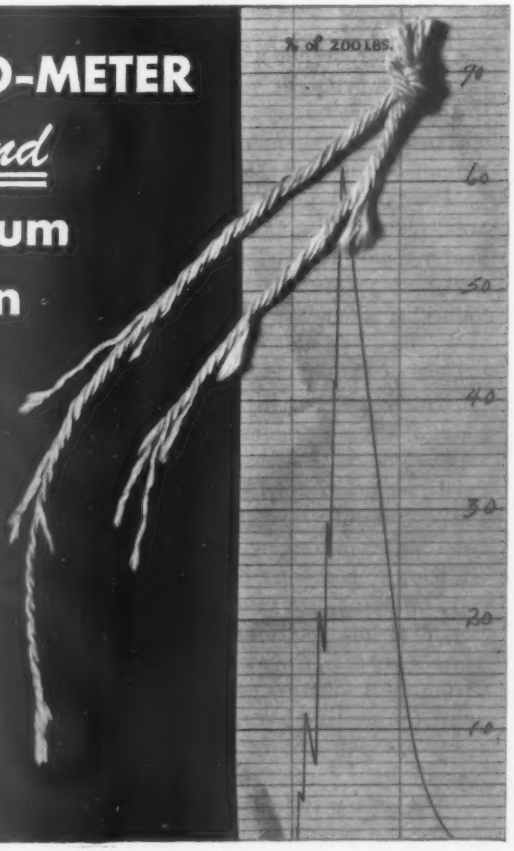
Employees are the most important group to be reached by a public relations program, Mr. Brayman said. Admitting that personal contact


Now... the Scott ACCR-O-METER tells what happens *beyond* the Maximum Indication



"Accr-O-Meter"® Inertialess Weighing System

*Applicable to existing Scott Testers**




The Scott Accr-O-Meter has picturized, in the instance of this test, the unbalanced construction of the cord. Similarly in tests for tear of fabrics, uniformity of adhesive bond, and seam construction, the Accr-O-Meter tells a story that is complete.

*Registered Trademark

*Literature upon request*

SCOTT TESTERS INC. 80 Blackstone St. Providence, R. I.

isn't always possible, he advised the textile manufacturers to make speeches and supplement them with employee publications directed "primarily to the promotion of understanding about American industry."

Mr. Brayman said supervisory employees should be given adequate information, through periodic meetings, news letters and fact books, so they can answer questions on company policies. Plant tours should be used to point up what the plant means to the visitors personally in terms of higher living standards rather than a mere display of machinery. Several hundred American companies are now using in-plant economic-education programs for employees, and that both management and employees are enthusiastic about the results where the programs have been intelligently handled.

In his talk entitled "Public Relations Begins At Home," Mr. Zacher, personnel director of the Norton Company, stressed that corporate management has a personal responsibility to the individual, his family and the community. Every responsibility carries with it commensurate accountability, he said. "Let us conduct ourselves in such a way that our employees and community will believe in our personal integrity and personal humaneness."

Whether or not a corporation will operate in peace, at a profit, or will progress, or even survive in this environment is dependent on how well its corporate management resolves pressures from human origin, Mr. Zacher said.

Deeds win good public relations, not words and this must be earned by day in, day out fair dealing, he indicated. They cannot be bought by putting a public relations man on the staff for six months. They are the result of the actions by every member of the management team and the actions of employees.

The Norton firm personnel director outlined a detailed plan undertaken by his company to obtain "goodwill"—the objective of its public relations program. This included relations with the community, relations with employees and families, relations with individual employees in addition to company policies.

The principles involved in the steel industry's recent public relations program during the crippling steel strike which won Congressional recognition of industry problems are essentially the same for any industry, Edward L. Ryerson, chairman of the board of Inland Steel Company, declared.

The cotton industry was urged to take its case before the public as the steel industry has done,


Stehedco and Southern

The Products That "Weave the World's Needs!"

ANOTHER Stehedco PATENTED FEATURE

Included among the 200 patent grants awarded to the Steel Heddle Mfg. Co., is one for the T-12 Slide Hook, illustrated.

Outstanding in service, the STEHEDCO T-12 is the best and most efficient Slide Hook on the market today. The T-12 reduces binding on the bar, because it has a longer bearing surface for the most FREE SLIDING.

SELF ADJUSTING, it permits minimum separation of heddle and is longer wearing . . . more economical.

Test the T-12 and find out what real slide hook satisfaction is.

1-1-18A

STEEL HEDDLE MFG. CO.
2100 W. ALLEGHENY AVE., PHILADELPHIA 32, PA.
Other Offices and Plants
Greenville, S. C. • Atlanta, Ga. • Greensboro, N. C. • Providence, R. I.
SOUTHERN SHUTTLES Paris Plant . . . Greenville, S. C.
A Division of STEEL HEDDLE MFG. CO.
STEEL HEDDLE COMPANY OF CANADA, LIMITED
310 St. Hubert Street, Granby, Quebec, Canada

**The INSTITUTE OF TEXTILE TECHNOLOGY**

***announces***

## A SPECIAL EDITION

***of the***

# TEXTILE TECHNOLOGY DIGEST

**February 28th, 1953, Issue**

**2,500 COPIES**

**to be sent**

## TO ALL PRINCIPAL AMERICAN MILLS AND TO ALL TEXTILE SCHOOL SENIORS

**featuring**

**Highlights of 1952 Textile Research**

**Articles of the Year – 1952 (Condensations of the leading articles from the most outstanding textile publications)**

## PLUS

**The regular features: "Textile Reader's Digest" of top February articles and "Textile Reader's Guide" to February textile literature**

***Reserve Your Advertising Space Now!***

**Ad copy deadline – February 7th, 1953**

Full Page Rate — Black & White.....$150.00
Half Page Rate — Black & White.....$ 85.00
(Add 16½% for two colors)

by the Inland official. The cotton industry in New England and throughout the country must have the support of every community, and the loyalty and enthusiasm of its workers, if it is to prosper and serve the people, he said.

Public relations as a function of modern management has become an essential part of industry, both large and small, it was said. "The products of industry may be sold on the basis of quality and price to meet the needs of the user whether he be a manufacturer or a consumer. But the question of whether the products of industry are sold on a basis that produces a satisfactory return on the investment depends today upon many factors that the public may control far beyond the simple questions of supply and demand and price."

The job of public relations includes defense of the good name and reputation of the industry, but also the execution of policies that will insure public understanding and support of the industry's objectives. The steel industry's public relations program includes national advertising and a group of our own publications, including magazines, fact sheets, pamphlets, background memoranda and news stories, said Mr. Ryerson.

One of the most successful undertakings in the steel industry's public relations program has been the co-operative activity in encouraging and stimulating steel executives, both senior and junior, to accept opportunities to appear before public forums to tell the story of the steel industry. "There are few things more important to public relations than the personal appearance of representatives of the industry before people," he asserted.

"From our experience in this regard, I can assure you that platforms are open to you if you show a willingness to accept speaking invitations. You will not always get as attractive an invitation as I have had from you but you will always find it worth while," Mr. Ryerson said. Anon. *America's Textile Reporter 116*, 12, 13, 14, 38 (October, 1952).